

The History of Lotteries

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Abstract

In this paper we give an overview of the history of lotteries. Starting from early evidence in the Bible and in the classical Roman world, we trace lotteries up to their reappearance in Europe in the 15th century. From that period onwards, lotteries became so numerous that we concentrate on a few exemplary cases: the old French lottery, early lotteries in New York, and lotteries in the German states. Finally, we give a brief account of more recent developments and discuss some related issues. JEL: B15, B25, D80, G29, H27, N4.

1 Introduction

Lotteries have a long history. Their use is documented in the Old Testament, and several Roman emperors used them for entertainment. They reappear in Europe in the 15th century mainly as a means to raise revenue for the state. Since then they have survived all opposition. From an economic viewpoint, lotteries are interesting for at least two reasons. First, the fact that people buy lottery tickets presents a challenge to the theory of decision making under uncertainty. The prevalent Expected Utility hypothesis cannot explain this phenomenon satisfactorily.¹ Second, lotteries are an important source of revenue for the state. If we look at the voluminous literature on tariffs in international trade and note that lotteries often contribute more to the state budget than tariffs, we can only wonder why the economic literature has remained so silent on this issue.

Although everyone probably has a broad idea of what a lottery is, let us have a closer look. Etymology of the word reveals that at the origin lies the old German word *hleut*, versions of which can be found in most Germanic and Romance languages (*lot* in English and French, *Los* in contemporary

¹Cf. the famous attempt by Friedman and Savage in [11].

German, and *lote* in Spanish).² It signifies *part of a whole to be distributed*. It is not clear which language was the first to take the step from *lot* to *lottery*. Leading contenders among etymologists are Italian and Flemish/Dutch, foreshadowing the actual history of lotteries in Europe. The Encyclopædia Britannica defines a lottery as a *procedure for distributing something among a group of people by lot or chance*. In other words, a lottery is an allocation mechanism which assigns anything from property rights to punishments by chance. This is what we will take to be a lottery in the broad sense. By contrast, a lottery in the narrow sense will be understood to mean what the above cited encyclopaedia describes as *a form of gambling in which a usually large number of people purchase chances, called lottery tickets*. Apart from the most basic type of lottery in which winners are simply drawn from the pool of tickets sold, there have been two other prominent forms of such games over the past centuries: the Dutch or class lottery and the *lotto di Génova*, both of which will be described below as they appear in the historic context.

As the title suggests, this paper will concentrate on the historical development of lotteries. In section 2, we investigate the ancient roots until their reappearance in Europe in the 15th century. Thereafter, we look at specific

²For an etymological overview of the word see [1, pages 11–12]. A more detailed treatment can be found in dictionaries of etymology such as [2, 9, 8].

national lotteries. The choice is influenced by the available literature but also by our desire to present exemplary cases: in section 3, we look at the old French lottery which was discontinued in the first half of the 19th century; in section 4, we consider early lotteries in New York as an example of New World lotteries; and section 5 tells the story of German lotteries which have been in operation with only short interruptions until the present day. In section 6, we follow the red thread of history up to the present day and describe the current state of affairs. Finally, section 7 briefly discusses some more general aspects of lotteries and offers concluding remarks.

2 Early history of lotteries

Lotteries, or more generally, decision making by chance, are very old. They were used to allocate property rights, assign unpopular jobs, and settle legal disputes. Early evidence for this can be found in the Old Testament. Moses distributed the land west of the Jordan river this way (Numbers, XXVI, 52–56); Jonah was thrown overboard to placify the sea because chance had revealed him to be responsible for the approaching storm (Jonah, I, 7–15); and *the lot puts even contentions to rest, and it separates even the mighty*

from one another (Proverbs, XVIII, 18). Other evidence for the early use of chance can be found in Greek mythology.³ But chance also played an important role in other cultures. In Japan and China, it was used to predict the future, and the Koran⁴ explicitly forbids gambling and lotteries, thereby acknowledging their existence.

It was the Romans, however, whose use of chance came closest to what we have defined as a lottery in the narrow sense. Chance was first used as an oracle: small tiles with inscriptions were drawn from a pool, and the inscriptions were interpreted to answer the questions posed to the oracle. It is not hard to imagine that people tried to influence the outcome by offering money. In fact Cicero in *De Divinatione* [5, page 433] criticises exactly this: *the whole system of peering into the future by means of lots was the invention of tricksters who were only interested in their own financial welfare*. Real lotteries were first used by the emperors. Augustus distributed small presents to his party guests by means of a lottery. Sometimes those guests had to pay a fee but still everyone obtained a present, albeit of varying value. Later emperors were not as modest. Nero had thousands of tickets thrown to the public, and prizes included slaves, real estate, and ships. Lotteries saw their

³The reference for this section is [1].

⁴Cf. Sura II-219, Sura V-93, and also footnote 241 in [12].

heyday under Heliogabalus. Now a good part of the prizes were worthless things, so that we can speak of real lotteries with blanks. After him, emperors were presumably too busy defending the empire to care much about lotteries.

The use of chance survived the demise of the Roman Empire. Germanic tribes, like most other cultures, used chance for prediction, but also as a means of practicing justice. Such *Gottesurteile*, or ordeals, were in use until the 16th century, although the Church outlawed them in 1215. But the survival of chance was also due to its use by merchants to distribute merchandise. These predecessors of today's commercial sweepstakes were employed, for example, by medieval Italian merchants.

The lottery reappeared in 15th century Flanders. Already in the 13th century it had been customary in Brussels to allocate market space by lottery. Also, certain municipal jobs were filled by means of lotteries, and unsuccessful contenders received consolation prizes. Lotteries in the narrower sense are first documented during the 1440s. There was one in Gent in 1445, another one in Utrecht in 1446, and many more were to follow. In 1515, a lottery was held in Brussels with the peculiar feature that out-of-town participants who came to Brussels for the lottery were guaranteed safe-conduct. The profits of these lotteries were intended for specific purposes, such as fortifications,

churches, or simply the coffers of a municipality. With time, the sums involved increased. In 1526, unlicensed lotteries were outlawed and during the 1560s further steps were taken in the direction of a state lottery. The type of lottery that developed in the Low Countries is known as the Dutch or class lottery. The distinguishing features of a class lottery are twofold: There is a series of drawings, called classes, and the number and price of tickets as well as the number and amounts of prizes are fixed in advance. This way, the organizer does not bear any risk. The prizes usually increase from class to class and the top prize is drawn in the last class. Tickets can be bought for the whole series, but also for one class at a time. Late entry, however, requires back payments for all the previous classes. Sometimes one also speaks of a class lottery if there is only one drawing, as long as the second feature is fulfilled.

The other early center of modern day lotteries was Italy. In the 15th century, a game called *bianca carta* appeared in the states of what today is Italy. The game is called after the white color of blank tickets, whose loudly proclaimed drawings far outnumbered the few winning tickets. In 16th century Genua, five important political positions were regularly filled from among 90 senators by means of a lottery. The public started betting on the

outcome of these lotteries, and this is the origin of Lotto. Soon, the names of the senators were replaced by the numbers 1 through 90, and the game was operated by bankers. Subsequently taken over by the state, it spread throughout Italy and has become the most popular form of lottery all over the world.

Lotteries developed and, at times, disappeared again in many countries. Instead of losing ourselves by trying to look at all of them, we will concentrate on a few exemplary cases.

3 The old French lottery

The Italian entourage of Caterina de Medici brought the game of *bianca* with them to France, where it became known as *blanque*.⁵ In 1539, after a visit to Italy, the French king François I gave his friend Jean Laurent permission to operate a lottery. The French budget was exhausted from wars with Spain, and Laurent was to pay 2,000 livres tournois annually for his privilege. Also, the participation of French citizens in foreign lotteries had led to capital exports which the king wanted to prevent. Over the following

⁵This section is based on [1, pages 23–24] and [14].

century, lotteries appeared only sporadically. In 1656, the Italian Lorenzo Tonti obtained a license for a lottery to finance the Pont Royal bridging the Seine to connect the Louvre and Saint-Germain. The project didn't succeed, but, in 1658, a lottery was held to finance the Hôpital Général de Paris. The following year, another lottery was organized for the king's wedding, and Louis XIV distributed 3000 tickets to the ladies of his court. According to the Encyclopædia Britannica, the king himself and several members of his court won major prizes but were forced to pay them back after popular discontent. Despite this setback, lotteries spread throughout France. In 1699, Lyon held one to support the local poor, and there were others in Angers and Amiens. In 1700, the lottery of the Municipality of Paris was established by royal decree. This lottery amounted to a total sum of 10 million livres and had to be extended one year until all tickets were sold. Similar lotteries were held on other occasions. From 1714 to 1729, about half of Paris' churches were renovated with money raised by lotteries. More significant was the establishment of regular (that is, regularly operating) lotteries. In 1754, a lottery for orphans and, in 1762, the lottery *de la Pitié* were set up. But far more important was the lottery of the Ecole Militaire established in 1757 to finance the construction of this institution. It was based on the example of

the Italian lotto, and drawings were held monthly. This lottery was highly successful, and tickets were sold throughout France by offices in all major French cities.

In 1776, Louis XVI monopolized lotteries in the hand of the state to balance a state deficit of 37 million livres. All other lotteries operating in France were either suppressed or - as was the case with the lotteries for orphans and *de la Pitié* - integrated into the state lottery. This new institution was managed by state administrators, and the staff had been hired mainly from the old lottery of the Ecole Militaire. But the sale of tickets was left to private agents. To better serve the provinces, local drawings were held in Lyon, Bordeaux, Lille, and Strasbourg. The lottery had two drawings per month and yielded about 10 million in yearly revenue to the state. With the French Revolution commenced a critical debate about the lottery. It was not abolished immediately, however, because of its importance for state finances. But the pay of its directors - mainly protégés of the old regime - was cut in half. Due to public criticisms, the revenue from the lottery fell. On November 15, 1793, after pressure from the Parisian Commune, the national Assembly abolished the lottery. Former customers took to playing foreign lotteries, especially the one in Cologne. It wasn't long before the decision

was reconsidered because of budgetary necessities. First attempts to reestablish the lottery failed in 1797–98. But later in 1798, the very proposal that had been rejected earlier was passed almost without discussion when it was presented as the only means to curb the deficit.

So the French lottery reappeared under the new name of *Loterie Nationale*. It operated along the same lines as its predecessor but, at the outset, drawings were held in Paris only, and the staff was much smaller than before. Tickets were again sold through private agents. But it didn't yield as much revenue as during the last years before the revolution, probably due to clandestine competition which had developed during the prohibition period. Napoléon didn't share his predecessors' instinctive suspicion vis-à-vis the lottery and appointed a former general as one of its three directors. The lottery prospered under his reign. In 1804, for example, the lottery produced a profit of 15 million which constituted about 2 percent of state revenue, and, in 1810, the lottery handed over 24 million to the treasury. This impressive increase, however, was due to territorial expansion. Napoléon personally gave orders to establish subsidiaries of the French lottery in countries he conquered. It happened in Brussels, Turin, Genua, Florence, Hamburg, and even in Rome, where the French lottery had to replace the Pontifical one. This immense

operation was rather well organized, as was the the French administration in general. Administrative costs accounted for about 10 percent of gross revenue, while 70 percent were paid out in prizes, and the rest went to the state.

The year 1814 not only saw military disasters for the French, but their national lottery suffered a loss for the first time in its existence. In the following years, the lottery continued to operate — now restricted to France proper — and yearly revenue fell only somewhat short of what it had been before, averaging 9.5 million, which is easily explained by the territorial losses. But with an improving budgetary situation, moral objections against the lottery started to gain weight. In 1829, a certain number of lottery outlets in poor departments were closed with the intention of protecting the working poor. Finally on May 17, 1836, the lottery was suppressed by the July monarchy. It is worth noting that the French National Lottery came into existence in 1776 when budgetary needs were greatest and ceased to exist in 1836 when the budget finally stabilized. France had to wait almost a century to see a new state lottery open in 1933.

4 Early lotteries in New York

European settlers brought the idea of lotteries to the New World. While the Spanish lottery served as an example for many lotteries in Southern and Central America, lotteries in the North were an immediate outgrowth of English lotteries.⁶ In fact, tickets of the English state lotteries were sold in the colonies. The 1740ies saw a wave of public lotteries in England to finance participation in the war of the Austrian succession. In this context, New York authorized its first public lottery in 1746 to finance fortification of the city. This first lottery was not overly successful. The drawing had to be postponed due to sluggish sales, and even then the treasury ended up buying the remaining tickets. Nevertheless, there was a second lottery at the end of the same year, this time to raise money for founding a college. Several more lotteries were necessary over the following decade to provide sufficient funding for King's College (Columbia). The success of the French in the French and Indian war prompted two lotteries in 1756: one to purchase firearms for people who could not afford them (Citizens had been ordered to arm themselves.), and another one to build a jail for prisoners of war. In 1758, a lottery was held to help the city of Albany repay its wartime debts. In

⁶Here and for the rest of this section cf. [18].

1761, construction of a lighthouse at Sandy Hook was financed by a lottery, since raising taxes seemed inadvisable, given the heavy burden resulting from the war. The same year a lottery was held to repair New York's city hall. In 1763, there was a lottery to provide funds for subsidizing the cultivation of hemp, exports of which were hoped to reduce the trade deficit with England.

These public lotteries were organized along the following lines. People who were interested in organizing a lottery for a particular public purpose petitioned the legislature, which would then pass a bill containing the full details concerning the lottery, such as method of drawing, names of managers, number of tickets, prizes, etc. After authorization had been granted, daily advertisements were placed in a local newspaper, and the tickets were sold by the managers personally. The money to be raised for the particular public purpose was obtained by explicitly deducting a certain percentage (usually 15 or 12.5 percent) from the prizes. In addition to their own public lotteries, New Yorkers could buy tickets for out-of-state and private lotteries. The wave of public lotteries seems to have spurred private competition. The legislature responded with ever stricter laws against private lotteries. Already, in 1721, New York had followed suit when England passed a law against private lotteries. In 1747, the fine for private lotteries was set to

double the amount of the lottery, one half of which had to be paid to the person who brought suit and the other half to the government. In 1759, an act was passed imposing a fine on the sale of tickets for private lotteries from other colonies, and, in 1772, another act was passed against the custom of disposing of property by means of a lottery. The year 1774 saw still another act instructing prosecutors to press charges and impose additional penalties for participation in private lotteries. During the revolution, two lotteries were held: one in 1780 to finance the purchase of firebuckets for the city, and the second in 1781 for the benefit of needy refugees.

The first lottery-related act after the revolution was aimed at suppressing private lotteries. It iterated the penalties of the law of 1774 but pardoned all offenses that had been committed after 1776. In 1790, a first lottery was authorized to repair the city hall of New York which was intended as the seat of Congress. Five years later, a lottery was held to benefit the poor, and, in 1797, one was authorized to improve certain roads. The beginning of the 19th century saw a wave of public lotteries: a series of lotteries to improve navigation of the Hudson river, four lotteries for the encouragement of literature, the Black River lottery for building a road along this river, a lottery to finance construction of the state capitol, and a series of lotteries

for the endowment of Union College. Organizing lotteries had become big business. Managers were required to give bonds to guarantee subsequent payment of prizes but also received commissions ranging from 10 to 15 percent of the amount raised. They no longer sold tickets personally but tended to sell them in bulk to lottery offices. Those lottery offices were a lucrative business. They not only sold tickets at a considerable margin but also offered lottery insurance and let out tickets. Letting out of tickets was possible because drawings lasted for several days, so one could rent a ticket by the day at a fraction of the cost of buying it. Much more important was lottery insurance, which was basically side betting on whether official tickets would obtain a prize or turn out blank. An act was passed in 1807 against lottery insurance and ammended in 1809 to cover private lotteries as well. The year 1810 saw the first failure of a lottery manager, which resulted in the state paying prizes at a loss of over 40,000 dollars. Despite these first mishaps there were new lotteries. To promote medical science, a lottery was authorized to provide money for the purchase of a formerly private botanic garden. Further lotteries were authorized for improving navigation of the Hudson, as well as for educational purposes and road building.

With the rising number and volume of lotteries, opposition to them grew.

A new law against private lotteries and lottery insurance was passed in 1813. Nevertheless, there were more lotteries to raise funds for Union College, and older lotteries were still running. After the proprietor of a lottery office, Charles N. Baldwin, accused a manager of the Medical Science lottery of fraud, and was found to be correct, the state assembly ordered an investigation. As a result of this investigation, an act was passed in 1819 which specified detailed regulations regarding lotteries.⁷ The state constitution of 1820 stated that the legislature should not authorize lotteries. In disregard of this, two more lotteries were authorized: one in 1820 to allow the city of Albany to dispose of public land, and the other in 1823 to build a fever hospital in New York. In 1822, acts were passed to facilitate drawings of lotteries, in order to bring the still ongoing ones to an end, and to turn over control of the lotteries to the institutions in whose favor they had been granted. In 1826, a last act was passed raising the penalties for the sale of unauthorized tickets and the forging of tickets. In the meantime, the agents Yates and M'Intyre had been charged with the management of all remaining lotteries. In 1832–33 accusations grew that these agents had sold more tickets than authorized. A settlement between them and the legislature was reached in

⁷See [18, pages 30–32] for these details.

1833, by which all lotteries had to cease on December 31, 1833.

5 Lotteries in the German states

The first lotteries appeared in Southern Germany in the second half of the 15th century.⁸ The first lottery we know of was held in Augsburg in 1470. Others followed: Straßburg (which was German at that time) in 1473, Erfurt in 1477, Gemünden in 1480, and several lotteries in Nürnberg around 1487. At the beginning of the 16th century, lotteries were also held further north. There was one in Frankfurt on Main in 1506, another one in Osnabrück in 1521, and several in Rostock at about the same time. The prizes in these early lotteries, however, were merchandise. The first monetary lottery was authorized in Hamburg around the year 1610. This was the beginning of a long and successful history of class lotteries in that northern port city. There can be no doubt about the Dutch origin of this lottery since the Hamburg Senate explicitly mentioned that lotteries were a common means of raising revenue in Holland. The next city to hold a lottery (Tickets of which have been preserved.) was Friedrichstadt. The fact that this small northern town

⁸This section is based on [1, pages 25–26] and [10].

was a Dutch settlement, and even today looks more Dutch than German, again indicates the Dutch origin of early monetary lotteries in Germany. In 1703, a class lottery was established in Berlin. But it was another fifty years before Prussia's rulers realized the importance of this institution. In 1763, it was nationalized, and at around the same time Friedrich the Great prohibited out-of-state and private lotteries. Class lotteries were set up all over Germany. Munich established one in 1785; there must have been one in Cologne since it banned foreign lotteries in 1765; and the list goes on.

But more successful than the class lotteries was lotto. First introduced in Berlin in 1763, it spread rapidly throughout Germany. Only a decade later more than 20 German cities had established this new form of gambling. In Hamburg, a lotto magazine called *Lottologie* was published. Lotto, though, was much more controversial than class lotteries. Hamburg closed its lotto after heated debates in 1785. The last state to abandon lotto was Bavaria in 1861. After German unification, in 1871, the smaller states promoted their traditional class lotteries at the expense of the Prussian lottery. Early this century, Prussia succeeded in signing lottery-treaties with most other states. In these treaties lottery states agreed not to sell their tickets in other states, while non-lottery states agreed not to set up lotteries. Prussia,

on the other hand, was allowed to sell its lottery tickets everywhere — a privilege, for which it made certain payments to the other states involved. Only Saxony, Hamburg, and Brunswick resisted the Prussian pressure. The different lotteries coexisted until 1938, when they were merged into a single lottery in an act of Nazi *Gleichschaltung*. The operation of this lottery was interrupted in 1945.

In 1947–48, four class lotteries were reestablished: the Süddeutsche Klassenlotterie in Munich, the Norddeutsche Klassenlotterie in Hamburg, the Klassenlotterie des Landes Rheinland-Pfalz in Koblenz, which was subsequently integrated into the Munich lottery, and the Deutsche Klassenlotterie in Berlin, which was integrated into the Hamburg lottery after the construction of the Berlin wall. In addition a new form of lotto was authorized in Berlin in 1952, and in the rest of Western Germany in 1955. This Berliner Zahlenlotto was based on “6 out of 49” instead of the traditional formula “5 out of 90”. Drawings were held every Saturday and, while the sales of the class lotteries stagnated, lotto conquered the market. In 1982, two additional weekly drawings based on “7 out of 38” were added. The success of lotto was not limited to Germany, but has repeated itself in many other countries.

6 The modern history of lotteries

The 20th century has seen the emergence of lotteries almost everywhere. France reintroduced a national lottery in 1933. The U.S. experienced a wave of lottery creation in the 1980s. Most other countries in the world now have lotteries, from Argentina to Japan, from New Zealand to many countries in Africa and Asia. Even the communist East had its state lotteries. Lotteries have become so numerous that we cannot give a comprehensive overview here.⁹ Most of these lotteries are operated by the state, either directly as government enterprises or indirectly as tightly-controlled autonomous organizations. The exception to this rule was the Irish sweepstake which is no longer in operation.

In 1956, the Association Internationale des Loteries d'Etats was founded, which has held biennial congresses ever since. It was from within this forum that the idea of an international lottery was put forward.¹⁰ Officially, the aim was to provide funds for development — specifically to fight illiteracy and further education — and even collaboration with UNESCO was envisaged. But the old problem of competition by foreign lotteries also played a

⁹An overview from the 1960s is available in [1, pages 30–39].

¹⁰See [13, pages 73–76].

role.¹¹ With the gradual lifting of capital controls, the problem of import competition had become more acute. The proposal was finally rejected in 1964 because of legal problems, concerns that the international lottery would indeed — contrary to the intention of its proponents — constitute competition for national lotteries, and the fact that the U.S. and U.K. would not participate, since lotteries were still banned in those two countries at the time.

One of the most recent chapters in the history of lotteries — and proof to its dynamics — are the developments in Russia. Since the collapse of the Soviet Union, over 300 private lotteries have sprung up there.¹² Due to the complete lack of regulation, they are often run by the mob, and there is prevalent fraud — a chronic problem of private, unregulated lotteries. Their enormous profits have attracted the attention of the cash-strapped Russian state. There is now a bill before parliament which would create an official national lottery. As so many times before in history, the state wants to monopolize the lottery business. We close this section by pointing out what is probably the most amazing among Russia's lotteries: the so called *Civilian in Space* sweepstakes — the prize being a stay on the Russian space station

¹¹Cf. [13, page 86].

¹²See the article *Hungry for Cash, Moscow Wants to Gamble on a Lottery* in [16].

Mir.¹³

7 Concluding remarks

This paper has been concerned with the history of lotteries. At this point let us briefly consider some more general aspects. The most fundamental question is whether lotteries should be allowed or forbidden on moral grounds. Lotteries have been accompanied by fundamental opposition since their reappearance in the 15th century. Allowing lotteries certainly seems less paternalistic since no one is forced to play them. The main motive for establishing lotteries, however, has been the state's insatiable appetite for revenue. The rather abrupt change on the part of many U.S. states from total prohibition to profit maximizing state monopolies shows how overwhelming this motive can be. There has been some research on the revenue aspect of lotteries in the wake of their introduction in the U.S. which views lotteries as an implicit tax. As such, lotteries do not only have relatively high administrative costs but - and this has been a major argument against them — are regressive. The political debate has produced controversy on this point, but there is

¹³Cf. [15, page 14].

strong evidence of regressivity relative to a proportional tax, although the poor do not play disproportionately in relation to their numbers.¹⁴ Note, however, that several taxes, which would be alternative means of raising revenue, such as the gasoline or tobacco tax, are in effect also regressive. Still, the implicit tax rate of modern day lotteries is extremely high, appropriating around 50 percent of revenues. Another area of research has been to determine which factors influence whether a person plays the lottery.¹⁵ The big open question, however, is *why* people play lotteries. There have been several attempts¹⁶ to provide an explanation, but it can safely be said that no definite and generally accepted answer has yet been found.

This paper has shown that lotteries are not only very old but have, over the centuries, become a pervasive feature of modern life. Many people want to play lotteries, and the prospect of additional revenue has overcome the concerns some legislators might have harbored. When moral opposition led to the abolishment of particular lotteries, they have tended to resurface. Even if we accept people's desire to gamble and the financial pretensions of the state, there are still many critical issues related to lotteries which merit

¹⁴Cf. the chapter *A "Painless Tax"* in [6].

¹⁵Cf. for example [7].

¹⁶Cf. chapter 5 of [6] for a list of "common sense" approaches and also see the literature on generalizations of Expected Utility such as [17].

consideration. In this paper we have only briefly touched upon these issues. Since the economical literature has been so silent on this topic, there is ample room for further research.

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